

**Problem:** Apple Scab - *Venturia inaequalis*



**Host:** Apple, flowering crabapple

**Description:** Scab is one of the most common and serious diseases of apple and flowering crabapple in Kansas. The disease causes premature defoliation and a reduction in the number and quality of flowers the year following defoliation, and can predispose trees to winter injury and other diseases. Scab first appears in early spring as roughly circular, velvety, olive-green spots on both the upper and lower surfaces of leaves. The spots eventually turn dark-green to brown and develop a rough texture. Some leaf distortion may accompany infection of expanding foliage. Numerous leaf or petiole infections will cause leaf yellowing and premature defoliation.

The fungus also may attack the fruit at any stage of development. Early infection results in blossom blight and dropping of young fruit. Later infections produce dark- green to black, circular lesions on the fruit. These rough, scaly spots cause surface blemishes to the fruit but do not extend deeply into the flesh.

The scab fungus overwinters as immature fruiting structures in partially decayed leaves on the orchard floor. During winter, the black fruiting structures of the fungus mature and begin to release spores (ascospores) in the spring. In Kansas, primary spore release begins in early to mid-April and continues for a period of five to nine weeks. Windblown spores are deposited on expanding leaves where they germinate and penetrate the leaf surface. Germination and infection of the host requires that the leaf surface remain wet for a period of time, the length of which varies according to the ambient temperature. Symptoms normally develop 9 to 17 days after infection; at this time the fungus begins to produce secondary spores (conidia) which can reinfest apple leaves or fruit throughout the summer during favorable weather.

**Recommendations:** The best means of avoiding scab is to plant resistant cultivars. Several cultivars of flowering crab are available with good resistance to scab, fireblight, and cedar-apple rust. Disease resistance, aesthetic quality, and adaptability to Kansas conditions should all be considered before choosing a flowering crab for planting.

Most apple cultivars are moderately to highly susceptible to scab. Recently, several new apple cultivars have been released with excellent resistance to scab and some other diseases, and should be considered before planting to reduce the number of pesticide applications.

Since the fungus overwinters on fallen leaves, the disease may partially be controlled by raking and burning or removing leaf debris in the fall. This will not give complete control, since even a few leaves missed during sanitation can start the infection process in the spring.

For susceptible flowering crabs, several fungicide applications may be required for control. The most critical spray period is in the spring when primary spores are being released from leaf debris. If this initial infection process is prevented, fewer sprays will be needed in late spring or early summer. In most cases, the first spray should be applied just before bloom. One to two additional sprays at 7- to 10-day intervals are necessary for adequate control during most springs. Several fungicides, including Captan, wettable sulfur, myclobutanil (Immunox, F-Stop Lawn & Garden Fungicide, Fungi-Max) and chlorothalonil (Daconil, labeled for crabapple only) are effective in controlling scab. Note that Immunox Plus contains an insecticide and is only labeled for crabapples and non-fruiting apples. Commercial apple growers or other large-scale growers should consult the current Midwest Fruit Pest Management Guide at the following website:

<https://store.extension.iastate.edu/product/14488>

Susceptible apples also must be protected against scab by fungicide sprays. The types of chemicals and timing of sprays are similar to those for flowering crab; however, several additional sprays are required during late spring and summer to protect fruit from infection.

## References:

1. [Scab of Apple and Flowering Crabapple](#). K-State Research and Extension Electronic Publication

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